

ABSTRACT OF THE DISCLOSURE

5 A determining method of movement sequence and a
positioning apparatus of the invention are arranged in
such a manner that, in order to measure positions of
plural marks as being measurement targets provided on
a wafer within a shorter time, a group including
executable movement sequences is generated out of a
group of movement sequence candidates, each indicating
a measurement order of these marks, and a movement
10 sequence that accomplishes a movement operation
between the marks within the shortest time is obtained
from the group thus generated.

15 For efficiently searching an optical system as a
globally optimal solution within a shorter computation
time, independently of an initial solution given, a
designing method of optical system of the invention
obtains the optimal solution of the optical system to
be designed, using an evolutionary computation method
(genetic algorithm) having a genetic operator for
20 handling continuous values explicitly. Particularly,
from a partial space defined by a predetermined
continuous occurrence probability distribution of
occurrence probabilities set based on parent
individuals, child individuals to be candidates in the
25 next generation population are generated according to
the occurrence probabilities.